

Application Serial No. 10/717,424  
Reply to office action of January 2, 2009

PATENT  
Docket: CU-3446

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Amendments To The Claims

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The listing of claims presented below will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. (previously presented) A transmitter used in a CDMA mobile communication system comprising:
  - a pilot transmit unit further comprising:
    - a pilot data generator which generates pilot data;
    - a first modulator which modulates the pilot data;
    - a second modulator which spreads a spectrum of modulated pilot data from the first modulator to thereby generate a pilot signal; and
    - a timing generator which generates a timing signal applied to at least one of the pilot data generators and the first and second modulators so that the pilot signal is intermittently transmitted; and
  - traffic channel transmit units which respectively transmit data signals in respect of traffic channels, wherein the data signals are transmitted continuously even when the pilot signal is transmitted intermittently.
2. (original) A transmitter used in a CDMA mobile communication system as claimed in claim 1, wherein said pilot signal has a period shorter than an interval in which the pilot signal is intermittently transmitted.

Application Serial No. 10/717,424  
Reply to office action of January 2, 2009

PATENT  
Docket: CU-3446

3. (previously presented) A receiver used in a CDMA mobile communication system comprising:

a pilot channel receive unit which demodulates pilot signals respectively transmitted intermittently in a spread spectrum formation by transmitters, and detects from the pilot signals, a timing for a traffic channel demodulation; and

a traffic channel receive unit which demodulates data at the timing detected by said pilot channel receive unit; and the timing detected by comparing peaks of the pilot signals intermittently transmitted, the timing for the traffic channel demodulation corresponding to a greatest one of the peaks, wherein the data signals are transmitted continuously even when the pilot signal is transmitted intermittently.

4. (previously presented) A transmitter used in a CDMA mobile communication system, comprising:

a pilot channel transmit unit which is configured to transmit a pilot signal in a spread spectrum formation; and

traffic channel transmit units which are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to transmit the pilot signal intermittently; a start timing of the pilot signal is offset from a start timing of a pilot signal transmitted by another transmitter in said CDMA mobile communication system; and said pilot signal whose start timing is offset has a period shorter than an interval at which said pilot signal whose start timing is offset is transmitted, and

Application Serial No. 10/717,424  
Reply to office action of January 2, 2009

PATENT  
Docket: CU-3446

wherein the data signals are transmitted continuously even when the pilot signal is transmitted intermittently.

5. (previously presented) A transmitter used in a CDMA mobile communication system, comprising:

a pilot channel transmit unit which is configured to transmit a first pilot signal intermittently in a spread spectrum formation; and

traffic channel transmit units that are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to start to transmit the first pilot signal at a different timing from a timing at which another pilot channel transmitter in said CDMA mobile communication system starts to transmit a second pilot signal, and said first pilot signal has a period shorter than an interval at which said first pilot signal is transmitted, and

wherein the data signals are transmitted continuously even when the pilot signal is transmitted intermittently.

6. (previously presented) A receiver for use in a CDMA mobile communication system, comprising:

a pilot channel receive unit that receives pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein a start timing of the pilot signals transmitted by different transmitters are offset from each other, and each pilot signal has a period shorter than an interval at

Application Serial No. 10/717,424  
Reply to office action of January 2, 2009

PATENT  
Docket: CU-3446

which each pilot signal is transmitted,

wherein data signals are transmitted continuously even when the pilot signal is transmitted intermittently.

7. (previously presented) A receiver for use in a CDMA mobile communication system, comprising:

a pilot channel receive unit which receives pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein the pilot signals start to be transmitted at different timing from each other, and each pilot signal has a period shorter than an interval at which each pilot signal is transmitted,

wherein data signals are transmitted continuously even when the pilot signal is transmitted intermittently.

8. (previously presented) A CDMA mobile communication method in a CDMA mobile communication system, comprising:

a transmitter, comprising:

a pilot channel transmit unit which is configured to transmit a pilot signal in a spread spectrum formation; and

traffic channel transmit units which are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to transmit the pilot signal intermittently; a start timing of the pilot signal is offset from a start timing of a pilot signal

Application Serial No. 10/717,424  
Reply to office action of January 2, 2009

PATENT  
Docket: CU-3446

transmitted by another transmitter in said CDMA mobile communication system; and  
said pilot signal whose start timing is offset has a period shorter than an interval at  
which said pilot signal whose start timing is offset is transmitted,

wherein the data signals are transmitted continuously even when the pilot signal  
is transmitted intermittently; and

a receiver, comprising:

a pilot channel receive unit that receives pilot signals transmitted by transmitters  
in said CDMA mobile communication system,

wherein a start timing of the pilot signals transmitted by different transmitters are  
offset from each other, and each pilot signal has a period shorter than an interval at  
which each pilot signal is transmitted.

9. (previously presented) A CDMA mobile communication method in a CDMA  
mobile communication system, comprising the steps of:

a) transmitting, on transmit sides, pilot signals in a spread spectrum formation  
intermittently; and

b) receiving, on a receive side, pilot signals transmitted by transmitters in said  
CDMA mobile communication system,

wherein a start timing of a pilot signal is offset from a start timing of another pilot  
signal transmitted by another transmitter in said CDMA mobile communication system,  
and said pilot signal whose start timing is offset has a period shorter than an interval at  
which said pilot signal whose start timing is offset is transmitted, and

wherein data signals are transmitted continuously even when the pilot signal is

Application Serial No. 10/717,424  
Reply to office action of January 2, 2009

PATENT  
Docket: CU-3446

transmitted intermittently.

10. (previously presented) A CDMA mobile communication method in a CDMA mobile communication system, comprising the steps of:

a) transmitting, on transmit sides, pilot signals in a spread spectrum formation intermittently; and

b) receiving, on a receive side, pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein the pilot signals start to be transmitted at different timing from each other, and each pilot signal has a period shorter than an interval at which each pilot signal is transmitted, and

wherein data signals are transmitted continuously even when the pilot signal is transmitted intermittently.

11. (previously presented) A CDMA mobile communication method in a CDMA mobile communication system, comprising:

a transmitter, comprising:

a pilot channel transmit unit which is configured to transmit a pilot signal in a spread spectrum formation; and

traffic channel transmit units which are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to transmit the pilot signal intermittently; a start timing of the pilot signal is offset from a start timing of a pilot signal

Application Serial No. 10/717,424  
Reply to office action of January 2, 2009

PATENT  
Docket: CU-3446

transmitted by another transmitter in said CDMA mobile communication system; and  
said pilot signal whose start timing is offset has a period shorter than an interval at  
which said pilot signal whose start timing is offset is transmitted,  
wherein the data signals are transmitted continuously even when the pilot signal  
is transmitted intermittently; and  
a receiver, comprising:  
a pilot channel receive unit which receives pilot signals transmitted by  
transmitters in said CDMA mobile communication system,  
wherein the pilot signals start to be transmitted at different timing from each  
other, and each pilot signal has a period shorter than an interval at which each pilot  
signal is transmitted.

12. (previously presented) A CDMA mobile communication method in a CDMA  
mobile communication system, comprising:  
a transmitter, comprising:  
a pilot channel transmit unit which is configured to transmit a first pilot signal  
intermittently in a spread spectrum formation; and  
traffic channel transmit units that are configured respectively to transmit data  
signals in respective traffic channels,  
wherein the pilot channel transmit unit is configured to start to transmit the first  
pilot signal at a different timing from a timing at which another pilot channel transmitter  
in said CDMA mobile communication system starts to transmit a second pilot signal,  
and said first pilot signal has a period shorter than an interval at which said first pilot

Application Serial No. 10/717,424  
Reply to office action of January 2, 2009

PATENT  
Docket: CU-3446

signal is transmitted,

wherein the data signals are transmitted continuously even when the pilot signal is transmitted intermittently; and

a receiver, comprising:

a pilot channel receive unit that receives pilot signals transmitted by transmitters in said CDMA mobile communication system,

wherein a start timing of the pilot signals transmitted by different transmitters are offset from each other, and each pilot signal has a period shorter than an interval at which each pilot signal is transmitted.

13. (previously presented) A CDMA mobile communication method in a CDMA mobile communication system, comprising:

a transmitter, comprising:

a pilot channel transmit unit which is configured to transmit a first pilot signal intermittently in a spread spectrum formation; and

traffic channel transmit units that are configured respectively to transmit data signals in respective traffic channels,

wherein the pilot channel transmit unit is configured to start to transmit the first pilot signal at a different timing from a timing at which another pilot channel transmitter in said CDMA mobile communication system starts to transmit a second pilot signal, and said first pilot signal has a period shorter than an interval at which said first pilot signal is transmitted.

wherein the data signals are transmitted continuously even when the pilot signal

Application Serial No. 10/717,424  
Reply to office action of January 2, 2009

PATENT  
Docket: CU-3446

is transmitted intermittently;

a receiver, comprising:

a pilot channel receive unit which receives pilot signals transmitted by  
transmitters in said CDMA mobile communication system,

wherein the pilot signals start to be transmitted at different timing from each other, and  
each pilot signal has a period shorter than an interval at which each pilot signal is  
transmitted.